AUTOMATED MICROSCOPIC IMAGE ACQUISITION, COMPOSITING, AND DISPLAY

ABSTRACT

An automated microscope and computer system captures a set of images for a capture area in a plurality of focal planes. The images can then be integrated into composite images for browsing to simulate viewing an item, such as a biological sample, under a microscope. A corrective filter can be constructed from the images to avoid an effect called "tiling." Before capture, variable focal plane error can be avoided by collecting z locations for a set of points in the capture area. During image browsing, entire composite images can be loaded into memory in compressed form. Compressed image portions can be pre-decompressed to avoid delay as a browsing user navigates throughout the composite images. Pre-decompression can be done by a thread separate from the thread performing navigation operations.